

# Preventing Employee Infections

ACH IP Course, 2022

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Infection Prevention Training for ACH  
Healthcare-Associated Infections Program  
Center for Health Care Quality California  
Department of Public Health



## Objectives

- Review essential activities of Employee Health programs
- Describe communicable disease screening and immunization guidance
- Describe prevention of bloodborne and airborne diseases
- Review priorities in post exposure management

## Employee Health and Wellness

- Education of infection prevention would not be complete without recognizing the role of healthcare personnel (HCP)
- HCP may be:
  - Carriers of infections to patients
  - Recipients of infections from patients
- The most crucial aspect is to keep both patients and HCP safe and infection free

## Employee Health Activities

### Pre-employment

- ✓ Communicable disease screening: immunity by titer or vaccine history
- Physical
- Drug screening
- Latex allergy screening
- TB screening
- Respirator fit-testing

### Annual

- ✓ TB testing
- ✓ Vaccines
  - Annual influenza
- Respirator fit testing

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## Employee Health Activities - Continued

- Infectious disease exposure investigations
  - Post-exposure management
  - Counseling
    - Infectious disease exposure risk
    - Work restrictions
  - Wellness promotion
    - Ergonomic worksite evaluation
    - Blood pressure checks
  - Compliance with CA regulation
    - Bloodborne Pathogen Standard
    - Airborne Transmissible Disease Standard
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# HCW Immunizations

## CDC Recommended Vaccines for Healthcare Workers

**Vaccine Information for Adults**

Adult Vaccination Home

Reasons to Vaccinate

Recommended Vaccines for Adults -

Adults with Health Conditions +

**Healthcare Workers**

International Travelers

Immigrants and Refugees

[CDC](#) > [Adult Vaccination Home](#) > [Recommended Vaccines for Adults](#)

### Recommended Vaccines for Healthcare Workers

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Healthcare workers (HCWs) are at risk for exposure to serious, and sometimes deadly, diseases. If you work directly with patients or handle material that could spread infection, you should get appropriate vaccines to reduce the chance that you

**On This Page**

- [Published Recommendations](#)
- [State Immunization Laws](#)
- [Resources for More Information](#)
- [Resources for Those Vaccinating HCWs](#)

[CDC Vaccines for HCWs](#)

([www.cdc.gov/vaccines/adults/rec-vac/hcw.html](http://www.cdc.gov/vaccines/adults/rec-vac/hcw.html))

# HCW Vaccination Recommendations

## Hepatitis B

- For HCW with no documentation of complete series and no serologic evidence of immunity or prior vaccination
- 2-dose (Heplisav) or 3-dose series (Recombivax or Engerix)
- Serologic test for anti-HBs 1-2 months after final dose

## Influenza

- 1 dose annually

## MMR

- If born 1957 or later, without serologic evidence of immunity or prior vaccination, give 2 doses MMR, 4 weeks apart
- If born before 1957, see [ACIP MMR vaccine recommendations](https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html)  
([www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html](https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html))

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[CDC Recommended Vaccines for HCW webpage](https://www.cdc.gov/vaccines/adults/rec-vac/hcw.html)  
([www.cdc.gov/vaccines/adults/rec-vac/hcw.html](https://www.cdc.gov/vaccines/adults/rec-vac/hcw.html))



## HCP Vaccination Recommendations - Continued

### Varicella (chickenpox)

- If no history of chickenpox, no prior varicella vaccine, and no serologic evidence of immunity, give 2 doses, 4 weeks apart

### Tetanus, diphtheria, pertussis

- If no Tdap previously (regardless of when Td received), give one-time dose of Tdap ASAP
- Td or Tdap booster shot every 10 years thereafter
- For pregnant HCWs, Tdap dose each pregnancy

### Meningococcal

- For microbiologists routinely exposed to *Neisseria meningitidis* isolates
- Both meningococcal conjugate vaccine and serogroup B meningococcal vaccine; boosters required (see CDC guidance)

## Employee Exposure Investigations

- Employee exposures may be patient-to-HCW, HCW to patient, or visitor-to-HCW
- Investigations are warranted when staff are exposed to infectious diseases or may have exposed others
- Evaluate type of exposure and risk of transmission
- Make list who was exposed: staff, first responders, patients, visitors
- Evaluate for post-exposure management
  - Prophylaxis
  - Vaccination
  - TB skin testing
- Determine if local and State public health should be notified

## Preventing Bloodborne Exposure in HCP

- Implement Standard precautions – mandatory
- Provide Hepatitis B vaccination series to all staff with potential for blood exposure
- Apply hierarchy of controls
  - Engineering controls: needleless devices and connectors
  - Work practice controls: no recapping
  - Administrative controls: disposal of sharps, linen-handling, cleaning

## Preventing Bloodborne Exposure in HCP -2

- Provide immediate post-exposure prophylaxis (PEP)
- Require bloodborne pathogen (BBP) training annually and as needed
- Update BBP exposure control plan (mandatory)
  - Employees must be given opportunity to contribute to product evaluation for sharps safety

# Risk for Bloodborne Pathogen Transmission Following Exposure

- Hepatitis B Virus (HBV)
  - 1-6 % if e-antigen negative (HBeAg-)
  - 22-30% if e-antigen positive (HBeAg+)
- Hepatitis C Virus (HCV)
  - 1.8%, range 0-7%
- Human Immunodeficiency Virus (HIV)
  - 0.3% (1 in 300 exposures), range 0.2%-0.5%

# Body Fluid Exposure Risk

## Low/No Risk\*

- Sweat
- Tears
- Feces
- Saliva
- Urine

\*Unless visibly contaminated with blood

## Higher Risk Body Fluids

- Blood
- Amniotic fluid
- Peritoneal fluid
- Cerebrospinal fluid
- Pleural fluid
- Pericardial fluid
- Vaginal fluid/semen
- Any body fluid with visible blood (saliva after dental procedure)

## Exposure Risk by Injury Type

- Infection risk dependent on type of exposure
- Examples, from **highest to lowest** risk:
  - Deep puncture from a used hollow bore needle
  - Laceration or wound with a dirty scalpel or instrument
  - Puncture through a bloody glove
  - Blood or body fluid on non-intact skin
  - Non-intact skin or mucous membrane contact with dried blood
  - Splash to mucous membranes

## BBP Post-Exposure Management

- Immediate first aide:
  - Clean with soap and water
  - Flush mucous membranes with water
  - Flush eyes with eye irrigant or clean water
  - Avoid bleach and other agents caustic to skin
  - No evidence of benefit from application of antiseptics or disinfectants, or squeezing (milking) puncture sites
- **Promptly** test the source patient and the injured employee per facility protocol



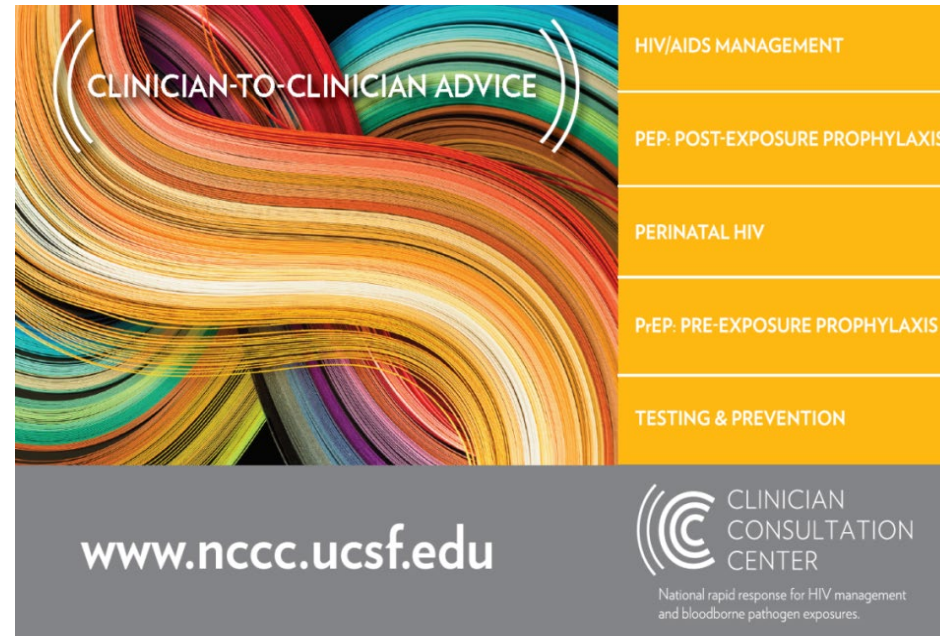


## Consider Post-Exposure Prophylaxis

- Hepatitis B
    - Treatment and prophylaxis varies depending on HCW vaccination status and if the source patient is HBsAg positive, negative, or unknown
  - Hepatitis C
    - Prophylaxis is not recommended
    - Consider expert consultation
  - HIV
    - Obtain physician assessment for post-exposure management soon after exposure, if indicated
      - Treat as an urgent medical concern
      - Ensure CBC, liver panel, pregnancy test done prior to initiation of medication
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## National Clinician Consultation Center

- Free consultation for clinicians treating occupational exposures to HIV and other bloodborne pathogens
- 9:00 am – 2:00 pm EST
- 7 days a week
- 1-888-448-4911



CLINICIAN-TO-CLINICIAN ADVICE

HIV/AIDS MANAGEMENT

PEP: POST-EXPOSURE PROPHYLAXIS

PERINATAL HIV

PrEP: PRE-EXPOSURE PROPHYLAXIS

TESTING & PREVENTION

[www.nccc.ucsf.edu](http://www.nccc.ucsf.edu)

CLINICIAN CONSULTATION CENTER

National rapid response for HIV management and bloodborne pathogen exposures.

# Preventing Airborne Disease Transmission in HCP: Risk Reduction Strategies

- Follow standard precautions
  - routinely wear mask if patient coughing or has uncontained respiratory secretions
- Implement cough etiquette for patients, visitors, HCW
- Apply mask on ill or coughing person for source control
- Conduct TB screening upon hire and annually
- Provide annual influenza vaccination
- Comply with Aerosol Transmissible Disease (ATD) standard, CCR Title 8

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Department of Industrial Relations Title 8

([www.dir.ca.gov/title8/5199a.html](http://www.dir.ca.gov/title8/5199a.html))



## Airborne Transmissible Disease (ATD) Standard

- Applies to all health care settings
  - Hospitals
  - Skilled nursing facilities
  - Hospices
  - Private medical offices and outpatient clinics where ATDs are diagnosed or treated
  - Paramedic and emergency services
  - And many others

Exceptions: dental offices and outpatient settings where ATDs are not diagnosed or treated

[CAL-OSHA ATD Standard](#)

([www.dir.ca.gov/title8/5199.html](http://www.dir.ca.gov/title8/5199.html))

## ATD Requirements

- Written ATD Plan
- Annual review and assessment of risk of transmission
- Policies & Procedures addressing ATD
  - Education & training for prevention
  - TB Screening
  - Post exposure management
- Provide seasonal influenza vaccination to all employees with potential for occupational exposure
- Engineering controls for management of patients with ATDs
- Fit testing for respiratory protection
- Maintenance of employee health records

# ATD Engineering Control Requirements for Hospitals

- Airborne Infection Isolation Room (AIIR)
  - 12 air exchanges per hour (ACH)
- AND
- Daily verification of negative pressure (via smoke stick or flutter test) while room is occupied
- Powered Air Purifying Respirator (PAPR) for high hazard procedures
  - Includes sputum induction, bronchoscopy, intubation, open system suctioning, aerosolized nebulizer treatment

## ATD Standard in Facilities Other than Hospitals

Many health care facilities are not equipped to care for persons ill with an ATD

- If a patient or resident develops respiratory illness
  - Transfer within 5 hours
  - Do not transfer if detrimental to resident's condition
- In absence of AIIR, place ill patient in single room with door closed
  - May cohort with other ill residents
  - Employees wear an N95 respirator to enter

## TB Risk Assessment

- Review HCP included in annual TB screening program
  - Annual skin testing/TB blood test
  - Review symptoms with previously positive employees
  - Annual chest x-ray not required
- Determine HCW to be included in Respiratory Protection Program, require fit testing
- Identify areas with increased risk for TB transmission
- Assess if adequate number of Airborne Infection Isolation Rooms
- Conduct periodic reviews of TB prevention strategies



## Summary

- An effective infection prevention program includes preventing employee infections and disease transmission
- Preventing employee infections requires communicable disease screening and vaccination
- Healthcare facilities must have active prevention and post exposure plans to prevent transmission of bloodborne and airborne pathogens
- Identify those at risk, provide prophylaxis if indicated and provide education to review risk reduction actions

## Additional References and Resources

- CDC Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Setting, 2005  
([www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm?s\\_cid=rr5417a1\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm?s_cid=rr5417a1_e))
- CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Post-exposure Management *Recommendations and Reports*, 62(RR10);1-19, 2013
- Kuhar et al. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for post-exposure prophylaxis. CDC, 2013

## Questions?

For more information,  
please contact

[HAIProgram@cdph.ca.gov](mailto:HAIProgram@cdph.ca.gov)

Include “ACH IP Training Course” in  
the subject line

## Post Test

Now that you have completed this  
module,  
Click on the “Post Test” link when it  
pops up

To Return to  
Learning Stream  
and take the post test

*If the Post Test link does not pop up,  
you will be sent a link via e-mail*